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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/551,914  | 09/30/2005  | Gilbert Blanchard    | 1022702-000291      | 8372             |
| 21839 7590 01/25/2010<br>BUCHANAN, INGERSOLL & ROONEY PC<br>POST OFFICE BOX 1404<br>ALEXANDRIA, VA 22313-1404 |             |                      |                     |                  |
| EXAMINER  |             |                      |                     |                  |
| GRAHAM, CHANTREL LORAN  |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
| 1797  |             |                      |                     |                  |
| NOTIFICATION DATE   |             | DELIVERY MODE        |                     |                  |
| 01/25/2010  |             | ELECTRONIC           |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

### Office Action Summary

**Application No.**

10/551,914

**Applicant(s)**

BLANCHARD, GILBERT

**Examiner**

CHANTEL GRAHAM

**Art Unit**

1797

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 16-22 and 24-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-22 and 24-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date 10/27/2009
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.1 14, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.1 14, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.1 14. Applicants' submission filed on 10/27/2009 has been entered.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 depends upon claim 23 that has been canceled. It is unclear what Applicant is claiming. Applicant is required to further bring clarification and/or correction to claims. Examiner has taken the position that claim 24 further limits claim 16.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 16-22 and 24-34, are rejected under 35 USC 103 (a) as being obvious over BLANCHARD ET AL. (WO0110545) used ENGLISH TRANSLATION BLANCHARD ET AL. (US PG PUB 20060005465), and in view of WAKEFIELD (US PG PUB 20050066571). Hereby referred to as BLANCHARD and WAKEFIELD.

6. Although WO0110545 is not in the English language, the examiner is relying on US PG PUB 20060005465 as the English translation thereof as is apparent because the US reference clearly shown on page 1 that this US reference is related to the WO reference. The paragraphs cited in the office action all refer to the paragraphs in the English transition (i.e. US reference).

Regarding claims 16-20, 22 and 28-29, BLANCHARD teaches an organic colloidal dispersion comprising: particles of at least a compound based on at least a rare earth, at least an acid, which is an amphiphilic acid (para 41), and at least a diluent (**antioxidant**), characterized in that at least 90% of the particles are monocrystalline. The invention also concerns the method for preparing said dispersion and its use as an additive to diesel fuel for internal combustion engines (abstract), and conventional fuel (para 102). BLANCHARD also teaches that the rare earth can be selected from cerium, lanthanum, yttrium, neodymium, gadolinium and praseodymium (para 30). Although BLANCHARD does not specifically teach antioxidants, this reference does in fact teach that diluents are aromatic solvents and alcohols (see para 26) and it is the examiners position that the diluents of

aromatic solvents and alcohols are equivalent to antioxidants and burden is upon applicants to show evidence otherwise.

Although BLANCHARD does not explicitly disclose that the diluent (antioxidant) are phenols, however WAKEFIELD does.

WAKEFIELD teaches an additive comprising cerium oxide, a rare earth compound, a metal from group IIA and IIIB (**abstract**); and an antioxidant that is phenolic an alkylphenol such as 2,6-di-tert-butylphenol (paragraph 53); which can be in an organic solvent (**paragraph 37**); and an organic carboxylic acid (**paragraph 27**) which is an amphiphilic acid.

It would have been obvious to one of ordinary skill in the art to combine the additive of BLANCHARD with the additive of WAKEFIELD if said composition was so desired, because all the claimed elements were known in the prior art at the time of invention and the motivation to combine BLANCHARD and WAKEFIELD is taught in WAKEFIELD in paragraph 5, that for cerium to be effective in diesel fuels as an additive it must be used in a stable dispersion.

Regarding claim 21:

Modified BLANCHARD teaches in paragraph 33 that the colloidal dispersions can also comprise at least one other element (E) selected from groups IIA, IVA, VIIA, IB, IIIB, IIIB and IVB of the periodic table.

Regarding claim 24:

Modified BLANCHARD teaches in paragraph 37 the particles in the dispersions have a fine grain size with a narrow size distribution. They have a  $d_{50}$  in the range 1 to 5 nm.

Regarding claim 25:

Modified BLANCHARD teaches in abstract as describe in the rejection of claim 16 as well as the particle are not larger than 200 nm and d80 d90 is not more than 5 nanometers (para198 and 127); and the aggregates comprising 1 (single) to 5 crystallites (para 25-26); the acid is an amphiphilic acid comprising at least one acid with 11 to 50 (10 to 50) carbon atoms, having at least one alpha, beta, gamma, or delta branch of the atom bearing the acidic hydrogen (para 41-50).

Regarding claim 26:

Modified BLANCHARD teaches in Example 1 the preparation of an organic colloidal solution of  $\text{CeO}_2$  produced From Cerium (III) Acetate, which is the preparation of an organic colloidal solution of cerium oxide. In paragraph 202 BLANCHARD teaches that the precipitate obtained was dried with a Buchi spray drier.

Regarding claim 27:

Modified BLANCHARD teaches in paragraph 43 examples of fatty acids: tall oil, soya oil, tallow, linseed oil, oleic acid, linoleic acid, stearic acid and its isomers, pelargonic acid, capric acid, lauric acid, myristic acid, dodecylbenzenesulphonic acid, 2-ethyl hexanoic acid, naphthenic acid, hexoic acid, toluene sulphonic acid, toluene phosphonic acid, lauryl sulphonic acid, lauryl phosphonic acid, palmityl sulphonic acid, and palmityl phosphonic acid.

Regarding claims 30-32:

Modified BLANCHARD teaches in paragraph 83-86 that the colloidal dispersion comprising particles of a rare earth compound, an acid, an organic phase, an antioxidant, and

an element E, wherein an atomic ratio of antioxidant to rare earth compound and the element E is 0.2 to 0.8.

Regarding claim 33:

Modified BLANCHARD teaches in paragraph 198-199 the preparation of a colloidal dispersion based on cerium-iron in respective proportions of 90/10 by weight.

Regarding claim 34:

Modified BLANCHARD teaches in paragraph 111 wherein a weight ratio between the organic phase and acid is 0.5.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHANTEL GRAHAM whose telephone number is (571)270-5563. The examiner can normally be reached on M-Th 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Marcheschi can be reached on 571-272-1374. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system,

Art Unit: 1797

contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHANTEL GRAHAM/  
Examiner, Art Unit 1797

/Ellen M McAvoy/  
Primary Examiner, Art Unit 1797